USSR

UDC 621.32.032.75

RODICHEV, Yu. M., CHEMERIS, A. N., PEREVORUKHOV, G. I., AMEL'YANOVICH, K. K., PODGORNYY, L. N., KRAYNOVA, E. A., Kiev, Problemy Prochnosti, No 8, 1972, pp 26-29.

The ceramic spheres are found to be capable of withstanding compressive stresses of up to 70% of the ultimate strength without residual changes in shape or dimensions, as long as the walls of the spheres do not have significant thickness variations.

2/2

USSR

UDC 612.813

FAYTEL'BERG-BLANK, V. R., and PEREVOSHCHIKOV, Yu. O., Chair of Pathophysiology and Biophysics, Odessa Agricultural Institute, Odessa

"The Permeability of the Synovial Membrane of the Knee Joint to Radiophosphorus Under the Effect of Pulsed Sinusoidal Modulated Currents"

Kiev, Fiziologichniy Zhurnal, Vol 19, No 3, May/Jun 73, pp 388-395

Abstract: The permeability of the synovial membrane of the knee joint to ^{32}P under the effect of sinusoidal modulated pulsed currents was studied in experiments on cats to which ^{32}P-Na_2PO_4 was injected into the knee joint. The effect of currents with a modulation frequency of 40, 80, or 150 cycles, current densities of 0.1, 0.3, and 0.5 ma/sq. cm., a pulse duration of 2 or 4 sec, modulation factors of 50 and 100%, and a duration of 5, 10, or 20 min in increasing the transfer of ^{32}P into the blood was investigated. The greatest effect in increasing the transfer of ^{32}P from the knee joint cavity was exerted by a current with a pulse duration of 2 sec, a density of 0.1 ma/sq. cm., a 20 min length of the time of action, a 50% modulation factor, and a modulation frequency of 40 cycles. A significant effect in increasing the permeability of the synovial membrane was also exerted by a current with

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USSR

FAYTEL'BERG-BLANK, V. R., and PEREVOSHCHIKOV, Yu. O., Fiziologichniy Zhurnal, Vol 19, No 3, May/Jun 73, pp 388-395

a pulse duration of 2 sec, a frequency of 40 cycles, a density of 0.5 ma/sq. cm., a 50% modulation factor, and a 10 min length of the time of action. Resorption of ^{32}P from the blood by internal organs decreased in the order kidneys > liver > spleen > lungs. The results should be of value for determining the dosage and type of sinusoidal modulated currents to be applied in the therapy of joint diseases.

2/2

Acc. Nr.: AP0029106

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhiatrii, 1970, Vol 70, Nr 1, pp 115-122

CORRELATIONS OF THE CLINICAL PICTURE AND MORPHOLOGICAL BRAIN CHANGES IN THE PROPULSIVE FORM OF EPILEPSY

I. S. Tets, G. F. Perevoshchikova, N. A. Smirnova

On the basis of personal experience and literary data the authors discuss problems of the morphological basis in propulsive forms of epilepsy. Clinico—anatomical data are reported of a case in a 9-year-old patient. The lethal outcome was due to bronchopneumonia. The convened data demonstrated that propulsive epilepsy is one of the forms of dysontogenesis. Mental immaturity so typical for this form of epilepsy is probably related to an organic brain insufficiency on the cerebellar-stem-subcortical nodes — cortical level (motor and temporal, and particularly in the speech zones). The depicted pathology in the area of the cerebellar system, as well as in the speech zones of the brain allow to under — stand the anatomo—functional basis of acute cerebellar ataxia seen so often in propulsive epilepsy. The mechanism of propulsive attacks are also determinad by changes in the subcortical-stem and cerebellar system.

1/1

REEL/FRAME
19680617

2 mB

USSR

UDC 669.71.053.4(088.8)

PEREVOSKIN, YU. L., FURMAN, A. A., KOGAN, V. M., VAKSMAN, P. A., and KARTALOV, B. V.

"Method for Preparing Solutions of Basic Aluminum Chlorides"

USSR Author's Certificate No 260624, filed 29 Feb 68, published 5 May 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G106)

Translation: A method is proposed for the preparation of solutions of basic Al chlorides by mixing Al $(OH)_3$ with HCl and subsequent neutralization of the obtained solution. To increase the purity of product, the neutralization of the solution is conducted with metallic Al in quantities, which ensure formation of the basic Al chlorides of the composition $Al_n(OH)_{3n-1}Cl$, where n = 1-3.

1/1

USSR

UDC:621.039.59

NOVOSELOV, G. P., DOGAYEV, YU. D. and PEREVOZCHIKOV, S. A.

"Losses of Uranium and Plutonium from Steel During Thermal Opening of Fuel Elements"

Moscow, Atomnaya Energiya, Vol 36, No 1, Jan 74, pp 69-70

Abstract: The disassembly of highly active fuel assemblies of fast reactors, their opening and separation of steel from fuel are among the most difficult problems in the process of regeneration. The losses of nuclear fuel with the steel must be minimal, so as to allow long-term storage of the steel without additional treatment. This article calculates the rates and times of settling of uranium dioxide particles of various sizes in drops of liquid steel. The calculations indicate that only for particles 10 μ or less in diameter will the settling time be over 1 minute. The calculations performed confirm the conclusion drawn earlier that the separation process can be successfully performed in the drop of steel, resulting in the production of steel ingots with less than 1% contamination with fuel and relatively low activity.

1/1

USSR

UDC: 681.325.65

POLONNIKOV, R. I., ALEKSANDROV, V. V., PEREVOZCHIKOV, Yu. G.

"A Self-Adaptive Classifier"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285353, class 42, filed 28 Apr 69, published 29 Oct 70, pp 121-122

Translation: This Author's Certificate introduces: 1. A self-adaptive classifier which consists of a matrix of adaptive elements, a maximum detector, and a display circuit. As a distinguishing feature of the patent, the device is designed to simplify phase discrimination of the output signal. For this purpose, the adaptive elements are made in the form of nine-aperture transfluxors, and each of the channels for each row of the matrix contains a pulse-shifting circuit based on ferrite rings with rectangular hysteresis loop, the windings of these rings being connected in a common circuit with the output and readout windings of the transfluxors. 2. A modification of this classifier with the distinguishing feature that sensitivity is increased by using m identical channels in the maximum detector, each of these channels being comprised of a series circuit consisting of RC integrating networks and a three-stage DC voltage amplifier

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based on two PNP transistors and one NPN transistor. The emitter circuit of the transistor in each amplification stage is connected across a resistor which is common to the m channels.

2/2

USSR UDC 619:576.858.4:576.809.32

PEREVOZCHIKOVA, N. A., and UZYUMOV, V. L., All Union Scientific Research Institute of Foot-and-Mouth Disease

"Interaction of Foot-and-Mouth Disease Virus with Cells of Tissue Cultures. Literature Review"

Moscow, Veterinariya, No 1, Jan 73, pp 41-43

Abstract: Two mechanisms of adsorption of the virus by tissue culture cells are effective. The first mechanism is purely physical and is based on retention of the virus particles on the cell surface by forces arising between the NH_2 and SH groups of the virus protein and the acid phosphate groups of the cell wall. The second mechanism, which determines infection of the cells, is based on interaction between the virus receptors and specific lipoprotein or mucoprotein cell receptors. Viruses penetrate into sensitive cells by the following interactions: 1) disintegration of the virus particle on the cell surface followed by penetration into the cell of the freed nucleic acid; 2) resorption by the cell of an intact virus particle followed by degradation of the particle inside the cell in vacuoles formed during phagocytosis; 3) resorption of an intact virus particle, which undergoes partial degradation on the cell surface or in phagocytosis vacuoles and then enters the cytoplasm, where

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USSR

PEREVOZCHIKOVA, N. A., and UZYUMOV, V. L., Veterinariya, No 1, Jan 73, pp 42-43 -

final deproteinization takes place. Mixed ways of penetration of a virus into cells are also possible. Riverson (1968) assumes that the virus of foot-and-mouth disease penetrates into sensitive cells by viropexis (a type of phagocytosis). An exact answer to the question as to how the virus of foot-and-mouth disease penetrates into cells and undergoes deproteinization is not yet available in the literature. After penetration of the virus into the cell and freeing of its genome, synthesis of the virus in the cell takes place during a latent period (eclipse stage) in which the virus cannot be detected by virological or serological methods. Both the RNA and protein of the virus of foot-and-mouth disease are synthesized in the cell cytoplasm. The process of synthesis culminates in freeing of the virus particles from the cell, a process which may be gradual or explosive. The gradual freeing is typical for viruses with an outer lipoprotein membrane; because the foot-and-mouth virus does not contain lipids, explosive liberation of this virus is more probable.

2/2

USSR

UDC 619:576.858.4

PEREVOZCHIKOVA, N. A., and UZYUMOV, V. L., All Union Scientific Research Foot-and-Mouth Disease Institute

"Foot-and-Mouth Disease Virus in Subcultures of Hog Kidney Cells"

Moscow, Veterinariya, No 9, 1971, pp 31-33

Abstract: Investigations were conducted with an electron microscope to determine the formation of foot-and-mouth disease (FMD) virus-like particles in cells of a hog kidney subculture as a result of interaction of the virus with the cells. A clonal FMD virus type A, variant A_{22} was propagated in a culture of trypsinized hog kidney tissue. The cells of the trypsinized tissue were then cultured in a test tube, and after the formation of a monolayer, washed with a maintenance medium, and infected with FMD virus. Thirty minutes after absorption of the virus, the medium was decanted, the culture washed with a fresh quantity of medium, and incubated at 37°C. Samples for electron microscope study were taken 4, 5, and 6 hours after infection. Metabolic processes in the samples were inhibited by keeping the cultures at 4°C for 18 hours. The material was then fixed in a buffer solution of osmium trioxide and poured into methacrylates by the plane-parallel method. Ultra-thin sections obtained on an ultramicrotome and contrasted with uranyl acetate and lead

USSR

PEREVOZCHIKOVA, N. A., and UZYUMOV, V. L., Veterinariya, No 9, 1971, pp 31-33

citrate were examined under an electron microscope. The examination revealed the presence of virus particles in the cytoplasm of hog kidney cells. The particles are homologous and not found in the controls, which suggests that they are particles of FMD virus.

2/2

USSR

KAMSHA, V. P., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 315-324

values of an arbitrary set of variables on passage of given sections of the program; c) variation of the values of the variables at any point of the program; d) tracing the order of passage of the tags and boundaries of the blocks of a given part of the program; e) calculation of the number of times passing through any point; f) changing the programmed sequence for execution of the operators of the initial program; g) inclusion, exclusion and restoration of following the program on passing given points; h) in addition, in all the enumerated cases it is possible to indicate the numbers of the passes and the conditions on satisfaction of which it is necessary to carry out the debugging operations. The described properties of the debugging language permit checking of several blocks of the program and detection of several errors in one output to the machine. For this purpose before the beginning of each module it is sufficient to simulate the operation of the preceding modules by the debugging operators. If as a result of tracing any part of the program an error cannot be detected in view of the fact that little information is output, it is necessary to introduce additional tags and do a repeated translation of the entire program. The bibliography has 15 entries.

2/2

UDC 8.74

USSR

KAMSHA, V. P., PEREVOZCHIKOVA, O. L.

"ALGAMS-ASVT Debugging System"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 315-324 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V485)

Translation: A study was made of a system for debugging the ALGAMS complex which is a component part of the general programming automation system ASVT. The problem of the debugging system consists in detecting and eliminating the syntactic and sematic errors. It is solved by the translator in two steps. In the first step the syntactic errors and the semantic errors accessible to detection during the translation time are caught. The second debugging step is carried out by a special program by any debugger for discovering the semantic errors which cannot be detected during the translation. The ALGAMS debugging program bypasses the error operators with output of messages and execution of the correction operators if this is not forbidden by the user using a special parameter. In the debugging language there are 12 operators which offer the following possibilities: a) printout of the values of the prime variables, files, and their elements at the given point; b) tracing the variation of the

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UNCLASSIFIED PROCESSING DATE--11DEC70

1/2 027

TITLE--CHROMATOGRAPHIC SEPARATION OF SOME CATIONS OF ANALYTICAL GROUPS
--III, IV IN ZIRCONIUM PYROPHOSPHATE -U-

AUTHOR-(02)-PEREVOZOVA, V.A., BOYCHINOVA, YE.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 794-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ION EXCHANGE RESIN, CHROMATOGRAPHIC SEPARATION, ZIRCONIUM COMPOUND, PHOSPHATE, OPTIC PROPERTY, CADMIUM COMPOUND, MERCURY COMPOUND, COPPER COMPOUND, LEAD COMPOUND, SILVER COMPOUND, NICKEL COMPOUND, IRON COMPOUND, ZINC COMPOUND, AQUEOUS SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0963 STEP NO--UR/0080/70/043/004/0794/0798

CIRC ACCESSION NO--AP0131548
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11DEC70

2/2 027

CIRC ACCESSION NO--AP0131548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING A COLUMN PACKED WITH ZR PYROPHOSPHATE ION EXCHANGER, (CA 68: 72668A) 0.1-0.15 G (DRY WT.), THE SEPN. WAS STUDIED OF THE FOLLOWING CATION PAIRS (1-2 MG-ML.): CO PRIME POSITIVE POSITIVE, CU PRIME POSITIVE POSITIVE, PB PRIME POSITIVE POSITIVE, PB PRIME POSITIVE POSITIVE, HG PRIME POSITIVE, CO PRIME POSITIVE POSITIVE, AG PRIME POSITIVE HG PRIME POSITIVE, NI PRIME POSITIVE POSITIVE, FE PRIME3 POSITIVE, ZN PRIME POSITIVE POSITIVE, FE PRIME3 POSITIVE, CU PRIME POSITIVE POSITIVE. ADSORBED CATIONS WERE VISUALIZED IN THE COLUMN BY THE FORMATION OF THE COLORED COMPDS. WITH DIFFERENT ANAL. REAGENTS, WHICH IN SOME CASES ALSO SERVED AS ELUTING AGENTS. IN OTHER CASES FOR ELUTION EITHER AQ. SOLN. OF ACIDS OR BASES WERE ALSO USED. THE CHROMATOGRAPHIC SEPN. IS MAINLY AN ION EXCHANGE PROCESS.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--AN ION EXCHANGE METHOD FOR ISOLATION OF CRYSTALLINE D CYCLOSERIN FROM FERMENTATION BROTH FILTRATES -U-

AUTHOR-(04)-YAKHONTIVA, L.F., BRUNS, B.P., KOBZITEVA, S.N., PEREVOZSKAYA, N.A.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 411-415

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ION EXCHANGE RESIN, FERMENTATION, CYCLOSERINE, CHEMICAL SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1140 STEP NO--UR/0297/70/015/005/0411/0415

CIRC ACCESSION NO--AP0115159

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 010
CIRC ACCESSION NO--AP0115159
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ION EXCHANGE METHOD FOR ISOLATION OF CRYSTALLINE D CYCLOSERIN FROM FERMENTATION BROTH FILTRATES IS DESCRIBED. THE METHOD INCLUDES SORPTION OF CYCLOSERIN IN THE CATIONIC FORM BY A STRONG CROSS LINKED SULFOCATION EXCHANGE RESIN (ON THE BASIS OF STYRENE AND DIVINYLBENZOL) IN A SERIES OF COLUMNS. AN AQUEOUS AMMONIA SOLUTION IS USED FOR DESORPTION. CYCLOSERIN IN CRYSTALLIZED FROM ELUATES AFTER THEIR CLARIFICATION, EVAPORATION AND DILUTION OF THE CONCENTRATE WITH ETHYL ALCOHOL. A PRODUCT OF HIGH PURITY IS OBTAINED.
FACILITY: NATIONAL INSTITUTE FOR ANTIBIOTICS, MOSCOW.

UNCLASSIFIED

UDC 536.24:532.526

USSR

NIKOL'SKIY, Yu. V., PERVUSHIN, G. Ye., CHERNIKOVA, L. G.

"Measurement of Thermal Flows on Spheres and Cones in a Vacuum Wind Tunnel"

V sb. Eksperim. issled. i vopr. modelir. techeniy razrezhen. gaza i plazmy (Experimental Studies and Problems of Modeling Flows of Rarefied Gas and Plasma -- Collection of Works), Novosibirsk, 1971, pp 41-46 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B853)

Translation: Studies of heat exchange of a sphere and a sharp cone in the transition flow region are described. The results were obtained in a vacuum wind tunnel at R = 1-100, M_∞ = 4.9 - 9.5 and $T_w/T_0 \sim 1$ using calorimetric models of diameter 3-5 mm. The good agreement between the results obtained and calculated and experimental data of other authors is noted. 7 ref. B. I. Bakum.

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USSR

UDC 669.295.015.3:543.42

GRIKIT, I. A., GALUSHKO, Ye. G., POLONIK, V. V., OGNEV, P. K., KOLOMOYETS, G. G., and PEREVYAZKO, A. I.

"Spectral Determination of Oxygen in Hydrided Titanium Powders"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana, Metallurgiya Publishing House, Vol 6, 1970, pp 155-159

Translation: A description is given of the method, based on the principle of full dehydrogenation of briquetted suspended matter, which is analyzed, in an anode state of the direct current arc and exciting the hydrogen from the mixture of gases in an argon environment by the same discharge. Recording of the analytic lines H 6,562.85 Å/Ar 6,965.43 Å was done on an ISP-51 spectrograph with a chamber with a focusing distance of 270 mm on Infra-760 photoplates. Graduated charts for determining hydrogen were constructed on coordinates (Delta S; lg G). The reproducibility of results from spectral determination of hydrogen in hydrogenated titanium powders is characterized by a variation coefficient of 5-6% with a hydrogen concentration interval between 1.5 and 4%. Three illustrations, two tables, and one bibliographic entry.
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UDC 621.762

USSR

OGNEV, R. K., KOLOMOYETS, G. G., TER-POGOSYAN, E. D., ESTRAKH, L. M., ANOKHIN, V. M., and PEREVYAZKO, A. I.

"The Effect of Technological Parameters on the Qualities of Construction Articles Obtained by the Method of Compacting Titanium Powders"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 94-97

Translation: The effect of the features of initial powders and the technological parameters in manufacturing construction articles on their mechanical properties is considered. When identical compacting pressures, the density of articles made of electrolytic powder is greater by 4-7% than for similar articles made of hydride powder, and this gap decreases during the process of heat treatment. Increasing the sintering temperature of the powder metallurgy titanium leads to an increase in tensile strength and elongation per unit length. Where heat treatment is at a temperature of 1,300°C, the tensile strength is equal to 55-65 gigacalories/mm^2 and the elongation per unit length reaches 11%. Two illustrations, one table, and three bibliographic entries.

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UDC 621.762

USSR

OGNEV, R. K., TER-POGOSYAN, E. D., KOLOMOYETS, G. G. PEREVYAZKO, A. I., ESTRAKH, L. M., and ANOKHIN, V. M.

"Powder Metallurgy Filters Made of Titanium Scraps"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 97-99

Translation: The effect of the technological parameters of manufacture and properties of the initial titanium powder on filter productivity are studied. It is discovered that it is expedient to compact filters at pressures up to two tons/cm^2 and to sinter them at temperatures not exceeding 1,100°C. Filter productivity is determined during filtration of liquids, and the dependence of productivity on a drop in pressure to one atmosphere and on the size and shape of grains of the initial powder is established. It is determined that the water carrying capacity of filters manufactured from hydride powder is 3-5 times greater than similar ones made of electrolytic powder. Two illustrations and two bibliographic entries.

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USSR

UDC 621.762.001:669.295

OGNEV, R. K., BRYNDIN, V. G., TER-POGOSYAN, E. D., KOLCMOYETS, G. G., and PEREVYAZKO, A. I.

"Study of the Process of Oxidation of Cermet Titanium Specimens"

Sb. tr. Vses. n.-i. i proyektn. in-t titana (Collection of works of the All-Union Scientific Research and Design Institute of Titanium), 1970, 5, pp 81-85 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G307)

Translation: Together with oxidation, compaction of specimens takes place. The rate of oxidation of porous Ti specimens at temperatures higher than $\alpha \rightleftarrows \beta$-transformation of Ti is inhibited and the intensity of compaction increases. 3 ill.

Author's abstract

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USSR UDC 621.762.01:669.295

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OGNEV, R. K., KOLOMOYETS, G. G., TER-POGOSYAN, E. D., ESTRAKH, L. M., ANOKHIN, V. M., and PEREVYAZKO, A. I.

"Influence of Technological Parameters on Properties of Structural Products Produced by Pressing Titanium Powders"

Sb. tr. Vses. n.-i. i proyektn. in-t titana [Collected Works of All-Union Scientific-Research and Planning Institute for Titanium], 6, 1970, pp. 94-97, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. 1 G453 by the authors).

Translation: The authors studied the influence of the properties of the initial powders and technological parameters in the manufacture of structural products on their mechanical properties. With identical pressing pressures, the density of products of electrolytic powders is higher than that of similar products of hydride powders by 4-7%, although this difference is reduced during heat treatment. Increasing the sintering temperature of metal ceramic Ti causes an increase in σ_b and δ. With a heat treatment temperature of 1300°, σ_b is 55-65 kg/mm^2, δ reaches 11%. 2 figures; 1 table.

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USSR UDC 629.78.002.3

SMIRNOV, V. M., PEREVYAZKO, A. T., FEDOROV, V. L.

"Effect of the Chemical Composition of Kh25N16G7AR Steel on Its High-Temperature Strength"

Metallovedeniye i term. obrabotka met. (Physical Metallurgy and Heat Treatment of Metals), 1972, No 8, pp 74-75 (from RZh-Raketostroyeniya,otdel'nyy vypusk, No 12, Dec 72, Abstract No 12.41.224)

Translation: Steel type Kh25N16G7AR (EI835L) is used to manufacture thin-walled welded-cast parts operating at temperatures to 850° C. The chemical composition of the Kh25N16G7AR steel is as follows: <0.12% C; 5-7% Mn; <1.0% Si; 23-26% Cr; 14-18% Ni; 0.25-0.45% N; <0.03% S; <0.035% P. The effect of each of the chemical elements of the Kh25N16G7AR steel on the temporary strength of the steel at 850° C was determined by correlation analysis of the data on dynamic production melts. The results obtained made it possible more precisely to define the limits of the chemical composition of Kh25N16G7AR steel and determine the range of optimal compositions with increased high-temperature strength. There are 2 illustrations, 1 table and a 7-entry bibliography.

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USSR

UDC 669.141018.44

SMIRNOV, V. M., PEREVYAZKO, A. T., and FEDOROV, V. L.

"The Effect of the Chemical Composition of Kh25N16G7AR Steel on Its Heat Resistance"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, 1972, pp 74-75

Abstract: The effect of each chemical element (C, Mn, Si, S, P, Cr, Ni, N) of Kh25N16G7AR steel on its short-duration heat resistance at 850°C was investigated by means of a correlation analysis of melting data. The experimental results make it possible to define more exactly the limits of Kh25N16G7AR steel composition and to determine the region of the optimum compositions with increased heat resistance. Higher contents of chromium and silicon and lower concentrations of manganese, nickel, and phosphorus increase the heat resistance. Nitrogen, carbon, and sulfur, in the limits of the brand composition, have little effect on heat resistance. One figure, one table, seven bibliographic references.

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UDC 669.1 . ...002.6?7

USSR

DANICHEK, R. Ya., CHUYKO, N. M., PEREVYAZKO, A. T., PIROZHKOVA, ... LITVINOVA, T. I., and SEMIKOPENKO, A. F., Dnepropetrovsk Metallurgical Institute

"Nonmetallic Inclusions in Structural Titanium-Containing Steels"

Novokuznetsk, Izv. VUZ, Chern. Metallurgiya, No 10, 1970, pp ...

Abstract: The influence of the deoxidation mode on the content and composition of nonmetallic inclusions in structural titanium-containing steels is studied with two versions of smelting: the current technology, and an experimental technology involving preliminary deoxidation of the metal with aluminum and calcium-silicon alloy plus diffusion deoxidation with powders of 75% ferrosilicon (0.4-0.6%), aluminum (0.2-0.25%), and coke (0.2-0.3%). Sedimentary deoxidation with aluminum (0.07-0.08%) is performed before introducing the ferro... This deoxidation forms nonmetallic inclusions predominately composed of alumina, which facilitates their rapid removal from the metal. The improved deoxidation mode, in combination with protection of the stream of metal from secondary oxidation during casting, allowed the mean content of nonmetallic inclusions from ... from ...022% to 0.01..6%. Rejection of castings was ... from to ...

11.?

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P

UR 0482

AA0040655

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-76

241273 CONCRETE ARTICLES are produced by the "dry" method comprising mixing the solid components with "dry" water, changing the mixture into moulds, densifying and subjecting to thermal treatment. The "dry" water consists of separate 2 μ droplets of water coated with a hydrophobic film, e.g. silica. It is prepared by vigorously mixing together 90% of water with 10% of hydrophobic silicic acid. The concrete mixture sets, when the hydrophobic film on the water droplets is destroyed either by heating or compression. The method is especially useful for the manufacture of high-density concrete or reinforced concrete articles or constructions; the absence of water excess may be of advantage in some special cases.

2.11.67 as 1194005/29-33. N.A. PEREYASLAVTSEV, G.V. ZHELUDKOV "TEPLOELEKTROPROEKT" INST. (20.8.69) BUL 23/1.11.69.

Class 80b. Inc.Cl.C 04b.

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19750242

AA0040655

AUTHORS: Pereyaslavtsev, N. A.; and Zheludkova, G. V.

Kiyevskoye Otdeleniye Instituta "Teploelektroproyekt"

19750243

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PRODUCTION OF OILS BY HYDROCRACKING A VACUUM DISTILLATE OF ARLANSKII PETROLEUM -U-

AUTHOR-(05)-LIPOVSKAYA, K.S., GOLDSHTEYN, D.L., ROGOV, S.P., PEREZHIGINA, I.YA., AGAFONOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 45

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--LUBRICATING OIL, PETROLEUM HYDROCRACKING, PETROLEUM DEPOSIT, CHEMICAL COMPOSITION, PETROLEUM DEWAXING, VACUUM DISTILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1961 STEP NO--UR/0318/70/000/005/0045/0045

CIRC ACCESSION NO--AP0133805

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202410011-8"

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 013

CIRC ACCESSION NO--AP0133805

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE DISTILLATE, HIGH IN S AND BITUMINOUS ASPHALTIC COMPDS., WAS HYDROCRACKED IN 1 STEP AT 100 ATM, 425DEGREES, AND 1 L. STOCK-L. CATALYST-HR, YIELDING A HEAVY FRACTION B. LARGER THAN 350DEGREES, WITH S 0.06, N 0.03, AND COKE 0.1PERCENT, WHICH WAS VACUUM DISTD. TO OBTAIN FRACTIONS WHICH WERE DEWAXED AND HYDROFINED TO YIELD LOW VISCOSITY AND AUTOMOBILE OILS. THE LATTER HAD VISCOSITY INDEX 100 AND 0.03PERCENT S.

UNCLASSIFIED

UDC 665.534

USSR

OSIPOV, L. N., KHAVKIN, V. A., AGAFONOV, A. V., ROGOV, S. P., RYSAKOV, M. V., and PEREZHIGINA, I. Ya., All Union Scientific Research Institute of the Petroleum Industry

"Hydrofining of Sulfur-Containing Secondary Gasolines to Obtain Stock for Catalytic Reforming"

Moscow, Khimiya i Tekhnologiya Topliv i Masel, No 2, 1971, pp 1-3

Abstract: The article describes results of experiments on the hydrofining of thermal-cracked and TCC gasolines, as well as mixtures of these gasolines with straight-run gasoline for the purpose of obtaining stock for catalytic reforming. The experiments were carried out on an apparatus with alumina-cobalt-molybdenum catalyst loading of 0.5 l, a total pressure of 35 at, a temperature of 350-425°C, space velocity 0.5-5.0 hr^{-1}, gas circulation 300 l/l stock. The object of the experiments was to obtain a product containing not more than 0.003 percent sulfur by weight or 0.0002 percent nitrogen by weight, with an iodine number no greater than 1 g I_2/100 g. The results indicate that these gasolines can be successfully improved on existing blocks or units for the preliminary hydrofining of straight-run gasoline L-24-300 following a slight

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USSR

OSIPOV, L. N., et al, Khimiya i Tekhnologiya Topliv i Masel, No 2, 1971, pp 1-3

modification of the design requiring merely a 50-100 percent increase in the loading volume of the alumina-cobalt-molybdenum catalyst.

1/2 042 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--EFFECT OF SILICON DIOXIDE CONTENT ON THE PHYSICOMECHANICAL AND CATALYTIC PROPERTIES OF HYDROCRACKING CATALYSTS -U-

AUTHOR--ROGOV, S.P., PEREZHIGINA, I.YA., AGAFONOV, A.V., SEMENOVA, YE.S., LIKHOVA, Z.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(3), 8-11

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--OXIDE CATALYST, ALUMINUM OXIDE, COBALT, MOLYBDENUM, SILICON DIOXIDE, MECHANICAL STRENGTH, PETROLEUM DESULFURIZATION, ISOMERIZATION, PETROLEUM HYDROCRACKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/2040 STEP NO--UR/0065/70/015/003/0008/0011

CIRC ACCESSION NO--AP0109972

UNCLASSIFIED

2/2 042 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109972

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIO SUB2 ADDED TO A COMOO SUB4-AL SUB2 O SUB3 CATALYST INCREASED ITS CRACKING AND ISOMERIZATION ABILITY, PRODUCING AN INCREASE IN THE CONVERSION AND IN THE RATIO OF ISO TO N HYDROCARBONS IN THE GASEOUS AND LIQ. PRODUCTS. THE MECH. STRENGTH OF THE CATALYST WITH ADDED SIO SUB2 INCREASED BY 50PERCENT; ITS PORE VOL. AND AV. PORE RADIUS ALSO INCREASED. THE DIESEL FRACTION OBTAINED WITH SUCH A CATALYST HAD A LOWER POUR POINT. THE CATALYST CONTG. 20PERCENT SIO SUB2 LOST ITS HYDRODESULFURIZATION ACTIVITY MORE RAPIDLY THAN THAT CONTG. 10PERCENT SIO SUB2.

UNCLASSIFIED

PEREZHOGIN, G.A.

GEOCHEMISTRY

Source: JPRS 61216, 13 Feb 74

METALLURGY AND MINERALS

DETERMINING THE PRESENCE OF GOLD IN BASIC AND ACIDIC ROCK FORMATIONS OF THE URALS

[Article by S. F. Sobolev, G. N. Anoshin, and G. A. Perezhogin of the Institute of the Mineralogy, Geochemistry and Crystal Chemistry of Rare Elements of the Academy of Sciences of the USSR and of the Ministry of Geology of the USSR, Moscow and of the Institute of Geology and Geochemistry of the Siberian Scientific Center of the Academy of Sciences, USSR, Novosibirsk, Moscow, Sovyetskaya Geologicheskaya Izvestiya Akademii Nauk SSSR, Russian, No 10, 1973, submitted to editors 27 October 1972, pp 68-78]

Among the many ore regions, the Urals are known as the oldest gold-ore province of the USSR, where native and placer deposits of gold are related to the acid intrusive and basic effusive formations. Moreover, since the past century the permanent presence of gold in placer deposits of native platinoids, genetically related to massifs of ultrabasic rock, developed very extensively in the Urals, has been known.

In connection with the little studied geochemistry of gold in ultrabasic and basic rocks and the great amount of interest which they have for the geochemistry of deep mantle formations, materials of original mineralogical and geochemical investigations of the most important basic and acidic formations of the zone of the Main Urals Fracture were presented as the object of investigation.

The Geological and Petrological Features of the Objects of Investigation

The Urals petrographic province is a classical zone of development of ultrabasic and basic rock, which form a number of basic and acidic intrusive formations, of greatest interest to understand the material composition of the deep zones of the Urals geosyncline are the extensively studied basic and acidic formations.

The rock massifs contained in these formations are native to the zone of the Main Urals Fracture of deep embedding, which separates the ancient metamorphic zone of the Ural-Tau from the zone of development of large sedimentary effusive greenstone strata of the Tagil-Magnitogorsk synclinore.

We are now conducting a wide search for and study of new methods of wages and material stimulation, and just a list of the experiments which are being conducted would fill an entire newspaper page.

A number of ministries -- above all, of the electrical engineering, instrument making, motor vehicle, electronics, and chemical industries and machine building -- are studying and encouraging these experiments. However, certain ministries and departments prefer an easier path. Instead of improving the methods of stimulating production and increasing the effectiveness of science, they seek to get a mechanical increase in wages by means of the establishment of all kinds of coefficients, shifting enterprises, institutes, and organizations to higher wage categories, and so forth. What can be said about this? You cannot manage a branch without managing labor. And to improve stimulation without first conducting experiments is also impossible because stimuli have to pass through a person's consciousness and abstract calculations alone may in practice prove to be ineffective.

A study and generalization of the results of the experiments will provide important material for a further improvement of the systems of stimulation which are in keeping with the demands of the current stage of our socialist economy. Perhaps in 1974 Literaturnaya Gazeta will describe the most interesting experiments in the field of stimulating labor. Can we hope for that?

Question: Indeed!... Thank you for the interview about our readers' letters.

2959
CSO: 1822-H

- 37 -

JPRS 59208
6.73

2

X-12b. TRANSPORT OF ADMIXTURES IN THE PROCESS OF EPITAXIAL GROWTH OF SILICON

[Article by A. V. Rodionov, G. A. Perezhogin, Moscow; Novosibirsk, III Simpozium po Protsessam Rosta i Sintezа Poluprovodnikovykh Kristallov i Plenok, Russian, 13-17 June 1972, p 141]

In the case of epitaxial growth of silicon on substrates with n-type conductivity (10^{15} atoms/cm^3) with local diffusion regions of arsenic, autoalloying of the epitaxial layers of silicon above the high-resistant sections is observed.

By using radioactive isotopes a study was made of the redistribution of arsenic from the diffusion region in the process of high-temperature annealing in epitaxial growth.

The autoalloying process includes two steps. During annealing in hydrogen the arsenic is volatilized from the face of the substrate and introduced into the pedestal. In the case of epitaxial growth of silicon the arsenic atoms crossed over from the charged pedestal to the growing epitaxial layer.

Beginning with this model, the autoalloying phenomena explain certain known facts of autoalloying of epitaxial silicon film.

PEREZHOGIN, G.A.

UDC 621.762.002.5(088.8)

USSR

DRUSHININ, L. K., LIEPINA, YE. D., KUVSHINOV, P. S., SIMONOV, L. P., SAFRONOV, B. V., PERFILOV, L. S., and TOKAREVA, L. I.

"Apparatus for Making Powders and Granules by Centrifugal Pulverization of Melt"

Ussr Authors' Certificate No 272501, Cl. 31 b^3, 9/00; 49 1, 3, [B 22 f 9/00, B 05 b 3/12], filed 12 Sep 68, published 2 Sep 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G470P by G. Derkacheva)

Translation: An apparatus is suggested for making powders and granules by centrifugal pulverization of a melt. The apparatus consists of a rotating ring with a hole in the bottom for delivery of the material to be pulverized, a local heat source situated above this material, and a cooler which is unique in that, in order to increase powder and granule quality, it is rigidly fastened to the outside of the ring.

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1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--FISSION CROSS SECTIONS AND FISSION FRAGMENT DISTRIBUTION DURING THE BOMBARDMENT OF LIGHT NUCLEI BY NEON 20 IONS -U-

AUTHOR-(04)-OBUKHOV, A.I., PERFILOV, N.A., SHIGAYEV, O.E., TKACHENKO, YE.G.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(5), 977-81

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FISSION CROSS SECTION, LIGHT NUCLEUS, NEON ISOTOPE, ION BOMBARDMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0580 STEP NO--UR/0367/70/011/005/0977/0981

CIRC ACCESSION NO--AP0137665

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137665

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FISSION OF NUCLEI PRODUCED FROM BOMBARDMENT OF SN AND AG TARGETS BY PRIME20 NE IONS WITH ENERGIES 198, 183, AND 168 MEV WAS STUDIED. FOR THE DETECTION OF THE FISSION FRAGMENTS NARROW GLASS GLATES WERE USED. THE FRAGMENTS IMPINGING ON THE PLATES AT AN ANGLE OF 90DEGREES LEAVE TRACKS. THE FISSION CROSS SECTIONS FOR THE LIGHT NUCLEI PRODUCED AT BOMBARDMENT OF SN AND AG TARGETS BY THE PRIME20 NE IONS WITH ENERGY ABOUT 200 MEV WERE CONSIDERABLY HIGHER (BY 2-3 ORDERS OF MAGNITUDE) THAN THE FISSION CROSS SECTIONS FOR THE SAME NUCLEI AT BOMBARDMENT BY P WITH NEAR ENERGIES.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--LIMITING ENERGY RESOLUTION OF THIN DETECTORS OF THE DE-DX TYPE IN THE E SUBALPHA EQUALS 5-9 MEV RANGE -U-

AUTHOR-(04)-AVDEYCHIKOV, V.V., GRIONEV, G.F., LOZHKIN, O.V., PERFILOV, N.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 210-17

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SEMICONDUCTOR DETECTOR, SILICON SEMICONDUCTOR, ALPHA PARTICLE DETECTOR, ALPHA SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/1045 STEP NO--UR/0048/70/034/001/0210/0217

CIRC ACCESSION NO--AP0110735

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0110735

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. STUDIES OF 10,8, 13.3, 23.1, 26.2, AND 39.2 MU THICK SI DETECTORS OF THE DE-DX TYPE WERE CARRIED OUT WITH STD. ALPHA PARTICLE SOURCES. A FORMULA FOR THE LIMITING ENERGY RESOLN. IS GIVEN.

UNCLASSIFIED

USSR

UDC 548.55

PERFILOVA, V. E., BODYACHEVSKIY, S. V., AVVAKUMOVA, L. A., and DERMAN, A. S.

"Study of the Temperature Fields of Melts for Growing Single Crystals"

Moscow, Neorganicheskiye Materialy, Vol 6, No 1, Jan 70, pp 100-103

Abstract: An investigation was made of the temperature fields of aggressive solutions of V_2O_3-Fe_2O_3 in BaO-B_2O_3 and PbO-PBS_2-B_2O_3 melts to determine the optimal temperature conditions for growing single crystals. The temperature fields were measured in the 1000-1250°C range. During one experiment the temperatures were measured in several horizontal planes of the melt and the temperature field was constructed from this. It was established that there are zones of thermal conductivity and free convection zones in the melt.

It is pointed out that the planar isotherms in the upper part of the melt arise from the fact that the heat transfer is realized as a result of thermal conductivity. The absence of convection in the liquid is characterized by the fact that the Rayleigh criterion does not exceed 1710, i.e., $Ra + Pr \cdot Gr < 1710$. The value of Ra was calculated for a boron-barium melt. In order to spread the region of existence of convection to the entire volume of the melt, it is necessary to increase the mean temperature level. In order to maintain crystallization

conditions when doing this, the concentration of crystal-forming oxides must be increased.

It is also pointed out that the calculated values of the Rayleigh numbers confirm that the measured temperature fields correctly reflect the heat-exchange processes taking place in the melt. When growing single crystals from the investigated systems on a seed charge, the crystal grows in the upper part of the melt. As the temperature is decreased, the zone of thermal conductivity increases. Crystal growth becomes difficult since the melt surrounding the crystal is impoverished by the garnet phase. At the same time, the zone of thermal conductivity prevents penetration of the convective fluxes rich in crystal forming oxides into the crystal. Consequently, the mass transfer in this region can be realized only by diffusion.

Acc. Nr: AP0049444 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: UR 0363

104739a Temperature fields of melts for growing single crystals. Perfilova, V. E.; Bodyachevskii, S. V.; Avvakumova, L. A.; Derman, A. S. (Vses. Nauch.-Issled. Inst. Elektroterm. Oborudovaniya, USSR). *Izv. Akad. Nauk SSSR, Neorg. Mater.* 1970, 6(1), 100–3 (Russ). To det. the optimum temp. conditions for the growth of single crystals, temp. fields of aggressive V_2O_3–Fe_2O_3 soln. in BaO–B_2O_3 and PbO–PbF_2–B_2O_3 melts were studied. The temp. fields were examd. at 1000–1250°. The presence of a thermal cond. zone and a free convection zone was established in the melts. S. A. Mersol

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REEL/FRAME
19801282

UDC: 542.61

USSR

SHARKOV, A.I., PETRUSHA, YE.A., PERFIL'YEV, A.I., and VOYEVUDSKAYA, S.V., Institute of General and Inorganic Chemistry, Kiev, Academy of Sciences Ukrainian USSR

"Extraction of Germanium With Aniline in the Presence of a Complex Forming Agent"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 36, No 4, Apr 70, pp 393-395

Abstract: Germanium was extracted with aniline as tripyrocatechuic acid. The ratio of aniline to the acid is 1:1. To diminish the loss of aniline to the aqueous phase, it was used in carbon tetrachloride solution. Germanium was reextracted with an aqueous solution of ammonium carbonate. The extraction begins to be noticeable at pH 0.1, increases rapidly to the optimal level around pH range 2.25-5.50, and then drops sharply at pH≥6.

USSR

UDC 621.791.01.001.5:669,245

PERFIL'YEV, A. N., Engineer, SIDLIN, Z. A., Engineer, LEN'SHIN, YU. T., Engineer

"Study With the Application of the Method of Experimental Planning of the Properties of the Weld Metal When Welding Nickel Alloy"

Moscow, Svarochnoye proizvodstvo, No 9, 1972, pp 1-4

Abstract: The method of experimental planning was used to study the properties of low-carbon nickel-chromium-molybdenum weld metal and obtain a mathematical description of the properties of the weld metal in the investigated range of compounds: Cr = 16.7-26.7%, Si = 0.3-0.93%, Fe = 1.17-2.36%. The effect of the content of the investigated elements (each separately and on interaction of them) on the properties of the weld metal was estimated by analyzing the regression equations obtained. Increasing the chromium content in the weld metal compensates for the negative effect of the silicon and iron. The admissible content of the silicon and iron increases appreciably in comparison with the base metal. The range of compositions of the weld metal having the optimal set of properties was defined as Cr = 19.2-21.7%, Si $\leq$ 0.3% and Fe $\leq$ 1.17%.

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ACCESSORY DEVICE FOR A SPECTROGRAPH FOR DETERMINING TRACE AMOUNTS OF MERCURY -U-

AUTHOR-(02)-VERES, G.I., PERFILYEV, A.P.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(2), 248-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MERCURY, TRACE ANALYSIS, METAL VAPOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1884 STEP NO--UR/0032/70/036/002/0248/0249

CIRC ACCESSION NO--AP0118846

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118846

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HG AT 10 PRIME NEGATIVE7-10 PRIME NEGATIVE8PERCENT CAN BE DETD. IF A REGULAR FLOW OF HG VAPORS INTO THE ARC ZONE (ARC CURRENT 8 A) IS SECURED, A 10-G SAMPLE IS PLACED IN A HORIZONTAL QUARTZ TUBE 10-15 MM IN DIAM., ONE END OF WHICH IS CONNECTED WITH AN AIR SOURCE AND THE 2ND ONE, TAPERED INTO A 3 MM CAPILLARY, TO THE ELECTRODE. A 50-MM LONG FURNACE, HEATED TO 800DEGREES, MOVES ALONG THE 150-MM SAMPLE LENGTH DURING THE TIME OF EXPOSURE, WHICH IS 9 MIN.

FACILITY: VSES. ZAOCH. POLITEKH. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 531.76/77

(12)

RYAPOLOV, V. A., KRYUKOV, L. V., KULIKOV, S. V., CHISTYAKOV, B. V., PERFIL'YEV, L. M., and OREL-KHOMYAKOV, G. A.

"A Device for Indicating the Direction of Rotation of a Stepping Motor"

USSR Author's Certificate No 363922 kl G 01 p 13/00, filed 17 Oct 70, published 21 Mar 73 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A 387P)

Translation: A device is proposed for indicating the direction of rotation of a stepping motor, containing a differentiating element and valves. To simplify and improve the reliability of the apparatus, one of the valve inputs is connected to each phase winding of the step motor; the other input is connected through the differentiating element to the following phase winding of the stepping motor, while the outputs of the valves are combined and connected to the output terminal. One illustration.

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USSR

UDC 62-531.4

YEFREMENKO, V.T., ZHURAKOVSKIY, T.D., MOROZOV, L.G., PERFIL'EV, L.M., RYAPOLOV, V.A., SVIRIDOV, G.S., TAREYEVA, V.N.

"Positional Tracking Drive"

USSR Author's Certificate No 262659, Filed 14/10/68, Published 19/05/70, (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Takhnika, No 12, 1970, Abstract No 12 A274P by T.R.)

Translation: A positional tracking pneumatic drive is patented, consisting of a power cylinder divided by a piston into two working cavities connected to the high-pressure channel through calibrated chokes. The power cylinder shaft contains a fluid distributor consisting of a cylindrical plunger with spiral grooves connected to the low-pressure chamber and through apertures in the shaft of the power cylinder with its working cavities. The distributor is rotated by the controller through the required angle. As the distributor rotates, a pressure difference is developed in the power cylinder cavities, acting on the piston until the holes in the shaft are moved to a symmetrical position relative to the distributor slots. The rotation of the sensor is converted to forward movement of the power cylinder shaft by the drive system. One figure.

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1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--POLARIZATION FOR CARBON DIOXIDE REDUCTION ON A PLATINUM ELECTRODE IN A SOLID ELECTROLYTE -U-

AUTHOR-(03)-KARPACHEV, S.V., ZUPNIK, A.YE., PERFILYEV, M.V.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(4), 577-80

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PLATINUM ELECTRODE, CHEMICAL REDUCTION, ELECTROLYTE, CARBON DIOXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1124 STEP NO--UR/0364/70/006/004/0577/0580

CIRC ACCESSION NO--AP0121683

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121683

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CATHODIC POLARIZATION (ETA) DURING CO SUB2 REDN. ON PT WAS STUDIED AT 900 PLUS OR MINUS 1DEGREE BY USING THE SOLID ELECTROLYTE 0.905 ZRO SUB2 PLUS 0.095 Y SUB2 O SUB3 AND CO PLUS CO SUB2 GAS MIXTS. CHLOROPLATINIC ACID WAS THERMALLY DECOMPD. ON EACH FACE OF THE CERAMIC TABLET AT 600-700DEGREES TO YIELD THE 3 PT ELECTRODES. THE VALUE OF ETA DEPENDED ON THE GAS COMPN. FOR ALL C.DS. UP TO 64 MA-CM PRIME2, ETA WAS A MIN. AT GAS COMPNS. OF 50-70PERCENT CO; THE LOWER C.D. VALUES GAVE A BROADER MIN. THE REASON FOR THE MIN. WAS NOT CLEAR. FURTHER DILN. OF THE CO SUB2 CONCN. CAUSED AN INCREASE IN ETA OWING TO CONCN. EFFECTS. THE POTENTIAL VARIATION WITH TIME FOR DIFFERENT CONCNS. OF CO SUB2 WERE CAUSED BY A STRONG DEPLETION OF THE CO SUB2 REACTION ZONE. FACILITY: INST. ELEKTROKHIM., SVERDLOVSK, USSR.

UNCLASSIFIED

Acc. Nr: AP0048185 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: 4R0007

102491q Study of iron oxidation in cummingtonite by the γ-resonance (Moessbauer) spectroscopic method. Ershova, Z. P.; Babeshkin, A. M.; Pen'kov, Yu. D. (Inst. Geol. Rud. Mestorozhd., Petrogr., Mineral. Geokhim., Moscow, USSR). *Geokhimiya* 1970, (2), 252-8 (Russ). The Fe^{2+} oxidn. in amphibolite was studied with cummingtonite samples from Krivoi Rog by detn. of chem. and optical characteristics and γ-resonance by the Moessbauer method. The areas of Moessbauer spectra were measured graphically. The amt. of Fe^{2+} in cummingtonite, detd. from the spectral areas, agreed well with the chem. detns. The value of the peak area, corresponding to Fe^{2+} in the M_4 position, remained unchanged during heating of cummingtonite under dynamic conditions up to the solid phase transformation at 900° accompanied by the disintegration of mineral structure and formation of new phases: magnesioferrite ($MgFe_2O_4$) and hematite. This substantiated the S. Ghose theory (1961) on the stronger M-O bond in the position M_4. Oxidn. of Fe in cummingtonite during heating >500° occurred at the expense of Fe^{2+} in the M_1, M_2, and M_3 positions. The degree of cummingtonite oxidn. at various temps. can be calcd. from the value of the spectral area. BLJR

REEL/FRAME 19791897

1/1 18

USSR

UDC 621.375.4.001

PERFIL'YEV, YU. S., BUL'BIK, YA. I.

"Analysis of a Balanced Amplifier made of Transistors of various Types of Conductivity with Application of Anomalous Elements"

Sb. nauchn. statey Elektrotekhn. fak. Krasnoyarsk. politekhn. in-t (Collected Scientific Articles of the Electrical Engineering Department of Krasnoyarsk Polytechnical Institute), Krasnoyarsk, 1970, pp 132-138 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D101)

Translation: A study is made of the circuitry of a two-cascade balanced amplifier made of transistors with two autonomous bias sources (one bias source in the output circuit and a power supply with a zero point). A new analysis technique is used (using the so-called nullors), which, in the opinion of the authors, is quite simple. The investigated amplifier can be used to amplify signals from thermocouples and other low-resistance voltage transducer under operating conditions on an emitter follower with a high input impedance. The bibliography has 4 entries.

1/1

USSR

UDC 621.039.52:691.3

DUBROVSKIY, V.B., ZHOLDAK, G.I., KORENEVSKIY, V.V., PERGAMENSHCHIK, B.K., PEREVALOV, V.S.

"Concretes Using Iron-Ore Aggregates Under Conditions Of High Radiation--Temperature Loads"

V sb. Vopr. fiz. zashchity reaktorov (Problems Of Physical Shielding Of Reactors-Collection Of Works), Issue 5, Moscow, Atomizdat, 1972, pp 262-273 (from RZh:Yadernyye reaktory, No 6, June 1972, Abstract No 6.50.125)

Translation: Portland cement hematitic concrete has good protective properties even with an absence of water in it. It is sufficiently radiation resistant in the presence of cumulative doses up to $7 \cdot 10^{20}$ n/cm^2. A significant change of stability, modulus of deformation, thermal conductivity, and coefficient of temperature expansion is not displayed. The expansion is discussed of concrete during irradiation which reaches 1--2 percent (linear) with a cumulative dose of $(2--7) \cdot 10^{20}$ n/cm^2, which it is necessary to take into account during planning of the construction of shielding from this material. With a temperature close to 1000° C portland cement hermatitic concrete preserves its properties to a sufficient degree. It is shown experimentally that it is possible to use such concrete in shielding at temperatures up to 800° C. 5 ill. 5 tab. 6 ref.

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USSR UDC: 519.2

PERGEL, Yozhef

"On Estimating the Parameters of Mixed Distributions"

Moscow, Unikal'n. pribory--sbornik (Unique Devices--collection of works), No 12, 1972, p 23 (from RZh-Kibernetika, No 5, May 73, abstract No 5V184 by D. Chabisov)

Translation: There is a sampling from a mixture of normal distributions $N(\mu_i,\sigma_i)$ with weights p_i, $i = 1,\ldots,l$. Assuming that the p_i are known, and $m_1<m_2<\ldots<m_l$, simple estimates are proposed for μ_i, σ_i.

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USSR

UDC 539.216.2

BELEVSKIY, V. P., BELOUS, M. V., PERMYAKOV, V. G., YASHNIK, V. M., Kiev Polytechnic Institute imeni V. I. Lenin

"Electrophysical Properties and Phase Composition of Tantalum Thin Films Made by Cathode Sputtering"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 3, Mar 72, pp 564-570

Abstract: It is shown that thin films of tantalum made by cathode sputtering in argon may consist of crystals of α-Ta, β-Ta, or a mixture of the two, depending on the conditions of condensate formation. The electrophysical properties and structures of tantalum α- and β-phases are investigated. The resistivity of the β-modification of tantalum was found to be 160-190 μΩ·cm, and the temperature coefficient of resistance -- $200 \cdot 10^{-6}$ deg^{-1} in 200 nm and 20 nm films. A β→α phase transformation takes place at 700-750°C in a vacuum of the order of 10^{-6}-10^{-5} mm Hg, accompanied by an appreciable change in the electrophysical properties of the films. In the case of very thin films (20 nm) interaction with residual gases lowers the β→α transformation temperature to 600-650°C.

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1/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--HEMATITE CONCRETE FOR SHIELDING FROM HIGH NEUTRON FLUXES -U-

AUTHOR-(05)-DUBROVSKIY, V.B., IBRAGIMOV, SH.SH., KORENEVSKIY, V.V., LADYGIN, A.YA., PERGAMENSHCHIK, V.K.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970. 28(3), 258-60

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--CEMENT, NEUTRON SHIELDING, IRON ORE, MECHANICAL STRENGTH/(U)298 CEMENT, (U)2134 HEMATITE ORE, (U)298 HEMITITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0752 STEP NO--UR/0089/70/028/003/0258/0260

CIRC ACCESSION NO--AP0131347

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0131347

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IRRADN. OF HEMATITE CONCRETE (PREPD. USING CEMENT 298, HEMATITE ORE 2134, FINELY DISPERSED HEMATITE 298, AND H SUB2 O 300 KG, AND HAVING A BULK D. OF 3030 KG-M PRIME 3) WITH AN INTERGRATED DOSE OF 2.6 TIMES 10 PRIME 20 N-CM SUB2 AT 250DEGREES CAUSES EXPANSION OF THE SAMPLES BY 1.2-1.5PERCENT, BUT FURTHER INCREASED IN THE DOSE (LESS THAN OR EQUAL TO 6.1 TIMES 10 SUB20 N-CM SUB2) AND TEMP. OF IRRADN. (350-400DEGREES) REDUCES THE EXPANSION TO ONLY 0.7-0.9PERCENT. THE IRRADN. REDUCES THE WT. OF THE SAMPLES BY UP TO 4PERCENT AT A DOSE OF (5-6) TIMES 10 PRIME 20 N-CM SUB2 AND REDUCES SOMEWHAT THE THERMAL COND., MECH. STRENGTH, AND DEFORMATION MODULI OF THE CONCRETE.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--USE OF NEPHELOMETRY TO STUDY THE WEAR OF THERMOPLASTIC PARTS -U-

AUTHOR-(02)-PERIN, YU.I., SEDYKIN, F.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 6(1), 80-2.

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--MEASUREMENT, WEAR RESISTANCE, THERMOPLASTIC MATERIAL, LUBRICATING OIL, FORMIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1379 STEP NO--UR/0369/70/006/001/0080/0082

CIRC ACCESSION NO--AP0135053

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--20NOV7C

CIRC ACCESSION NO--AP0133053

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WEAR OF NYLON 6 (I), METAL GEARS WAS DETD. BY ISOLATING I PARTICLES SUSPENDED IN THE LUBRICATING OIL, DISSOLVING THEM IN HOT 65PERCENT HCO SUB2 H AND DETG. THE SOLN. CONCN. BY NEPHELOMETRY. THE LUBRICATING OIL WAS PURIFIED BY FILTRATION PRIOR TO USE. AFTER THE TEST PERIOD THE OIL WAS REMOVED FROM THE GEARS BY WASHING WITH LIGROIN. AN ALIQUOT WAS CENTRIFUGED TO REMOVE THE ABRADED METAL PARTICLES, THE RESIDUAL I PARTICLES WERE FILTERED THROUGH SINTERED GLASS, DISSOLVED, AND DETD. IN THE ROUTINE TESTS THE WEAR WAS READ DIRECTLY FROM THE CALIBRATION CURVES. FACILITY: VNIPI MONOMEROV, TULA, USSR.

UNCLASSIFIED

Corrosion

USSR UDC 678.01:54

PERIN, Yu. I., VALIYEVA, R. A., and SHELYGOVA, N. S., Engineers

"Chemical Resistance of Faolite and Graphitoplast ATM-1 in an Environment of Polyvinyl Chloride Synthesis"

Moscow, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 5, May 70, pp 26-27

Abstract: When the method of liquid-phase hydrochlorination of acetylene, developed by the All-Union Scientific Research and Planning Institute for Monomers (Tula), is used for the synthesis of polyvinyl chloride, the equipment is exposed to highly corrosive media. The presence of gaseous hydrogen chloride and hydrochloric acid in the medium, as well as the elevated temperature regime, almost completely rule out the possibility of using metals and their alloys for manufacture of the equipment so that there is interest in the use of nonmetallic materials. The article describes results of a study of the resistance of Faolite and graphitoplast ATM (antegmite) under hydrochlorination. Standard-shape specimens were cut out mechanically for the tests from presolidified Faolite sheet and ATM-1 cake (State All-Union Standard 4650-65). It was found that tubes of graphitoplast ATM-1 can be used to manufacture a reactor with a diameter of up to 150 mm since this material provides

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USSR

PERIN, Yu. I., et al, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 5, May 70, pp 26-27

good heat exchange through the wall. Casting graphitoplast NL can be used for larger reactor diameters, or the reactor lined with ATM-1 cake. It is recommended that equipment operating at a normal temperature, as well as reactor covers exposed to gas media, gas conduits for hydrogen chloride and vinyl chloride, pipes and pipe fittings, be made of Faolite.

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF HYDROLYSIS AND NEUTRALIZATION CONDITIONS ON THE EXTENT OF DECOMPOSITION OF HIGHER FATTY ALCOHOL SULFATES -U-

AUTHOR-(02)-PERISTYY, V.A., BAVIKA, V.I.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. MOSCOW 1970, (2), 36-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--HYDROLYSIS, SULFONATION, SULFATE, DETERGENT, CHEMICAL DECOMPOSITION, THERMAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0569 STEP NO--UR/0318/70/000/002/0036/0038

CIRC ACCESSION NO--AP0119487

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--23OCT7(

CIRC ACCESSION NO--AP0119487

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SULFO ESTERS, OBTAINED BY SULFONATING C SUB10-18 FATTY ALCS. WITH H SUB2 SO SUB4 OR HSO SUB3 CL, WERE HYDROLYZED WITH MEASURED AMTS. OF H SUB2 O AND THE ACIDITY WAS RAPIDLY DETO. THE HYDROLYSIS DEGREE INCREASED WITH THE INCREASE OF THE CONCN. OF ESTERS, TEMP., AND ACIDITY. THE SULFO ESTERS HAD RATHER GOOD STABILITY AT 30DEGREES, HENCE COULD BE USED AS DETERGENTS AT MODERATE TEMP. THE DURATION OF THE PROCESS WAS REDUCED BY CARRYING OUT THE NEUTRALIZATION AT HIGHER TEMP. THE CONCN. OF ALKYL SULFATES IN THE PASTE COULD BE INCREASED BY USING MORE CONCD. ALKALI, PROVIDING INTENSIVE MIXING, AND MAINTAINING AN ALK. MEDIUM. THE PRODUCTIVITY OF THE INSTALLATION FOR OBTAINING ALKYL SULFATES COULD BE THUS INCREASED.

UNCLASSIFIED

USSR

UDC 575.24

PERIYLINN, O. and KASK, K., Institute of Experimental Biology, Academy of Sciences Estonian SSR, and Yygeva Selection Station, Estonian Scientific Research Institute of Agriculture and Soil Improvement

"Rust Resistance in Mutant Lines of Spring Wheat Induced by Chemical Mutagens"

Tallin, Izvestiya Akademii Nauk Estonskoy SSR, Biologiya, Vol 20, No 3, 1971, pp 250-254

Abstract: The 5th, 6th, and 7th generations of 60 mutant lines of the Norrona spring wheat strain in which mutations had been induced by N-nitrosoethylurea and N-nitrosomethylurea were investigated for their resistance to brown rust (Puccinia triticina) and stem rust (Puccinia graminis) while grown in a hothouse (where they were infected artificially) and on experimental plots and regular fields (where they were exposed to natural infections). None of the mutants were totally resistant to brown rust strain 77 and to stem rust. However, a number of them were much more resistant to these fungi than the parent Norrona strain; they were also highly productive. In view of the considerable improvement achieved, it is concluded that the method of chemical mutagenesis is promising and may eventually produce strains totally resistant to rust diseases.
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USSR

UDC 669.15.018.295:538.5

GRUZIN, P. L., RODIONOV, YU. L., LI, YU. A., YEDNERAL, A. F., ZHUKOV, O. P., and PERKAS, M. D., Institute of Metal Science and Physics of Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Redistribution of Alloying Elements Upon Recovery in Martensite-Aging Alloys Fe-Ni-Mo and Fe-Ni-Co-Mo"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 2, 1973, pp 423-427

Abstract: In order to determine the reasons for differences in the nature of change of recovery of the alloys N16M5 and N16K15M5 at various temperatures, the phenomenon was studied by nuclear γ-resonance (NGR). The composition of the alloys is as follows: N16M5--16 wt.% Ni, 5Mo; N16K15M5--16.4% Ni, 5.25% Mo, 15.1% Co, remainder Fe in both cases. Low temperature aging was at 420° C for 8-100 hours; the recovery temperature was 100° C higher. It was found that cobalt has a significant influence on the processes of redistribution of alloy-element atoms during recovery. The degree of recovery in alloys with cobalt increases, apparently as a result of decomposition of metastable segregations at low temperatures.

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USSR

UDC 669.15'24'25-192:669.017.3

YEDNERAL, A. F., ZHUKOV, O. P., KABLUKOVSKAYA, M. A., KOGUTNOV, B. M., and PERKAS, M. D., Institute of Metal Science and Physics of Metals; Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Investigation of the Ordering Process in Ion-Nickel-Cobalt Alloys with Martensite Structure"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 727-734

Abstract: In the martensite of Fe-Ni-Co ternary alloys an exothermal process accompanied by increased strength and modulus of elasticity takes place at 300-500°C. The process depends on the formation of a short-range order. In the alloy with high Ni and Co contents, zones with a long-range order of the FeCo-type were disclosed by the electron-microscopy method. The maximum change in properties on isochronal heating for 1 hr is observed at 450-500°. The plastic deformation of specimens processed for maximum hardness leads to a loss in strength. A change of Co and Ni contents has an influence on hardening in the heating of Fe-Ni-Co alloys. In the Fe+15%Co and Fe+20%Co binary alloys hardening on heating was not observed. The increase in hardening of Fe-Ni-Mo

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YEDNERAL, A. F., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 727-734

alloys in aging and when introducing Co is explained by the formation of a short-range order of Fe-Co-type and the decreased solubility of Mo in the α-phase. The latter makes the principal contribution to hardening. Eight difures, two tables, 15 bibliographic references.

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Transformation and Structure

USSR

UDC 669.15.018.295:539.25

YEDNERAL, A. F., ZHUKOV, O. P., PERKAS, M. D., Institute of Metal Science and Physics of Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Structural Changes Upon Aging of Martensite of Iron-Nickel-Tungsten and Iron-Nickel-Cobalt-Tungsten Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 2, 1973, pp 339-346

Abstract: The alloys N17V10, N15K15V10 and N15K20V10 were studied by diffraction electron microscopy. The structure of the alloys in the aged state, the structure of hardening phases, and the distribution and form of their segregations were studied. The structure of the alloys was studied after aging at 520, 550 and 600°. Segregations rich in tungsten were found to be one of the products of decomposition of the solid solution of martensite Fe-Ni-W alloy. These segregations consist almost entirely of tungsten atoms and have a body-centered cubic lattice. At 440°, a hexagonal close-packed phase based on Ni_3W is also formed.

USSR

YEDNERAL, A. F., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 2, 1973, pp 339-346

At 500° and higher, there is also a stage of formation of tungsten segregations, but the phase separated is primarily an Fe_2W-based intermetallide. The segregations are formed heterogeneously on martensite crystal structural defects. The introduction of 15-20% Co causes the solid solution to stratify into microvolumes, some rich in iron and cobalt, others rich in tungsten and nickel. All of these decomposition products help to harden the alloy.

USSR

UDC 669.15.018.295:539.52

YEDNERAL, A. F., ZHUKOV, O. P., and PERKAS, M. D., Institute of Physical Metallurgy and Metal Physics and the Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Effect of Cobalt on the Strength of Martensite in Fe-Ni-Co-W Alloys During Aging"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 3, 1973, pp 569-573

Abstract: Changes in hardness, electrical resistance, and mechanical p o-perties, occurring during aging of martensite in alloys with Fe-15% Ni-10% W-(0-20)% Co, were studied. It was found that cobalt in Fe-Ni-Co-W alloys, the same as in Fe-Ni-Co-Mo alloys, promotes effective martensite strengthening during aging. The addition of cobalt to Fe-Ni-W martensite leads to a large amount of tungsten leaving the solid solution during aging and to an increased rate of this process. Of the 10 alloys tested, alloy N15K20V10 had the highest tensile strength (273 kG/mm^2) with good ductility after aging for four hours at 475°C. When the tungsten content is increased to around 18%, a tensile strength of 300 kG/mm^2 can be achieved but ductility is very low, which is apparently caused by precipitation of the mu-phase from the austenite. Aging should be done after forging because the austenite grains are smaller then after high-temperature hardening. 2 figures, 2 tables, 5 bibliographic references. 1/1

USSR

UDC 669.15.620.187:536.425

YEDNERAL, A. F. and PERKAS, M. D., Institute of Physical Metallurgy and Metal Physics, Central Scientific Research Institute for Ferrous Metallurgy imeni I. P. Bardin

"Formation of a Metastable Ordered Omega-Phase in the Maraging of an Fe- Ni-Co-Mo Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 2, Feb 72, pp 315-325

Abstract: An electron microscope study was made of the martensite structure of N18M6, N16K15M5, and N12K15M10 alloys after aging at 440°C for 16 hours. The Ni, Co, and Mo content of these iron-base alloys is as follows (in wt %):

	Ni	Mo	Co
N18M6	17.8	5.95	----
N16K15M5	16.2	5.35	14.7
N12K15M10	11.9	10.50	15.0

It was shown that addition of cobalt to a maraging Fe-Ni-Mo- alloy causes the formation of homogeneously nucleating enriched molybdenum concentration heterogeneities which change into highly dispersed precipitates with ordered

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USSR

YEDNERAL, A. F., and PERKAS, M. D., Fizika Metallov i Metallovedeniye, Vol 33, No 2, Feb 72, pp 315-325

molybdenum atoms. The size of the precipitates was approximately 30 Å. Electron microscope photographs revealed that the precipitates had a somewhat distorted b.c.c. lattice similar to the lattice of the hexagonal omega-phase and a probable change in composition of these precipitates according to the formulas: A_8B--A_7B_2--A_2B, where A is nickel, iron, and cobalt and B is molybdenum. The given state is metastable and upon increasing the aging temperature to 520°C the precipitates of the ordered omega-phase are converted into a more equilibrium intermetallic phase $(Fe, Ni, Co)_2Mo$. The authors

thank A. G. KHACHATURYAN for his observations regarding the work. Four figures, 3 tables, 16 bibliographic references.

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USSR

UDC 669.14.018.2

YEDNERAL, A. F., ZHUKOV, O. P., and PERKAS, M. D., Central Scientific Research Institute of Ferrous Metallurgy

"Martensitic-Aging Steels With Strength Higher Than 200 kg/mm^2"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, 1971, pp 9—14

Abstract: Investigation results are presented on the aging of martensite of three-component and multi-component alloys, all of them containing < 0.01 % C, < 0.004 % S, and < 0.002 % P, and melted down in a vacuum-induction furnace on carbonyl iron of high purity. The investigation results are discussed by reference to tabulated data and diagrams showing the methods of thermal treatment and aging, the effect of the aging temperature and of Co on the change of mechanical properties, and the sequence of processes by aging martensite in Fe — Ni — Mo alloys alloyed with Co. It was found that martensitic—aging steels with a

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YEDNERAL, A. F., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 4, 1971, pp 9-14

tensile strength of σ = 240 –250 kg/mm^2 possess satisfactory plasticity and ductility. In martensitic-aging steels melted down on pure burden materials, the contents of Ti and Al can be increased up to 1.8% and 1.0 %, respectively, and high strength (σ > 220 –230 kg/mm^2) and satisfactory plasticity will be obtained after aging. Seven illustr., five tables, seventeen biblio. refs.

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USSR

UDC 669.15'24'28'25-194:669-157.97

PERKAS, M. D., GRUZIN, P. L., YEDNERAL, A. F., MOGUTNOV, B. M., RODIONOV, Yu. L., and YEREMENKO, M. A., [Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin]

"The Effect of Cobalt on Martensite Aging in Fe-Ni-Mo Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 2-10

Abstract: Experimental data indicate that aging of N16M5 alloy occurs in two stages. At first, Mo atoms migrate to dislocations, and new centers of homogeneous structure are formed. In the second stage a stable intermetallic $(Fe, Ni)_2Mo$ phase is formed. When the same steel was alloyed with 5% Co, the first aging stage was not affected, but more of the intermetallic phase was formed during the second aging stage. When the Co amounts to more than 8-10% (N16K10M5, N16K15M5, N12K15M10) the aging of martensite changes. In this case three aging stages were observed: (1) deformation aging with the formation of regions with short-range order; (2) formation of segregations and separations containing Mo and Ni and having ordered atom positions and ω-phase structure. These segregations were stable and were formed not only at dislocations but also away from the dislocation lines. The third

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USSR

PERKAS, M. D., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 2-10

stage became apparent at high temperatures (480-500°C) when separations containing ω-phase are unstable and dissolve or transform into the stable $(Fe, Ni, Co)_2Mo$ phase.

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1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PHENOMENON OF RECOVERY IN ALLOYS WITH AGEING MARTENSITE -U-

AUTHOR-(03)-ALEKSENKO, E.A., KULINICHEV, G.P., PERKAS, M.D.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 335-339

DATE PUBLISHED----FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SOLID SOLUTION, CHEMICAL DECOMPOSITION, IRON ALLOY, NICKEL ALLOY, MOLYBDENUM ALLOY, COBALT ALLOY, TITANIUM ALLOY, METAL AGING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0214 STEP NO--UR/0126/70/029/002/0335/0339

CIRC ACCESSION NO--AP0129470

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129470

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RECOVERY PHENOMENA EXHIBITED BY MARAGING FE,NI,MO, FE,NI,TI, AND FE,NI,MO,CO ALLOYS WERE STUDIED. THE EXTENT OF THE RECOVERY PROCESS DEPENDED ON THE DEGREE OF DECOMPOSITION OF THE SOLID SOLUTION AND THE DIFFERENCE BETWEEN THE TEMP. OF PRELIMINARY AGEING AND RECOVERY IN EACH CASE. THE EXTENT OF THE RECOVERY ALSO DEPENDED TO SOME EXTENT ON THE PROPORTION OF CO IN THE ALLOYS. IN SOME CASES A METASTABLE PHASE WAS FORMED DURING THE LOW TEMP. AGEING OF THE FE,NI,MO,CO ALLOYS.

UNCLASSIFIED

USSR

UDC 669.15:24'25'

KULINICHEV, G. P., and PERKAS, M. D., Institute of Metal Studies and Metal Physics, TsNIICHM imeni I. P. Bardin

"Investigation of the Aging of Austenite of Titanium- and Molybdenum-Alloyed Alloys on the Iron-Nickel Base"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 5, May 70, pp 1018-1024

Abstract: It was established that a nonuniform decomposition of austenite takes place with the formation of equant face-centered cubic particles of Ni_3Ti inside the austenitic grain and of platy colonies of $(Ni, Fe)_3Ti$ hexagonal along the boundaries. A similar nonuniformity of structure leads to the reduction of the lamellar properties of the alloys. The appearance of recovery in austenite is dependent on the solution of the particles of the metastable face-centered cubic-phase of Ni_3Ti. The possibility of using austenite aging in conjunction with subsequent martensite aging as one of the possible methods of producing high-strength carbon-free steels on an iron-nickel base is considered. In N25M5T2 alloy the increase in the number and size of face-centered cubic particles of Ni_3Ti, which originate at low aging temperatures and which are capable of growing with heating to higher temperatures, leads to an increased rate of austenite work hardening with subsequent aging at higher temperatures.

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USSR

UDC 669.15'24-194:620.17

BERESNEV, G. A., KOZEL'SKIY, A. V., LUK'YANOV, V. V., MALAFEYEV, A. S. and PERKAS, M. D.

"High-Strength Carbon-Nickel Steel"

Moscow, Metallovedeniye, No 9, Sep 72, pp 64-66

Abstract: The mechanical properties of C-Ni steels with 10-14% Ni were investigated. The chemical compositions of the steels are as follows:

	C	Ni	Mo	W	V	Co	Si	Mn	S+P
UN-10	0.32	10	----	----	----	----	0.15	0.20	0.012
UN-12	0.32	12	----	----	----	----	0.12	0.21	0.010
UN-14	0.33	14	----	----	----	----	0.17	0.21	0.011
UNS	0.40	14	0.35	0.55	0.4	----	0.10	0.80	0.040
UNS-20	0.17	14	0.38	0.60	0.4	----	0.11	0.05	0.020
UNS-20K	0.17	13	0.22	0.43	0.15	5.5	0.10	0.06	0.020
UNS-50K	0.54	10	0.68	----	0.3	4.3	0.10	not determined	

Ingots weighing 30 kg were vacuum-induction melted and rolled into strip 5 mm thick, which was subjected to normalization at 950°C and high-temperature tempering at 500°C. In the hardened state, the UN and UNS steels have high strength and ductility. The highest strength of UN steels can be achieved by quenching

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USSR

BERESNEV, G. A., et al., Metallovedeniye, No 9, Sep 72, pp 64-66

from 675°C. Also, the impact strength is lower than after quenching from 750°C. High-nickel steels with a tensile strength of 190-223 kgf/mm^2 had an impact strength of 5-8.5 kgf-m/cm^2. UNS-50K steel had the highest strength but less elongation and reduction in area. Alloying C-Ni steels with Mo, W, and V (0.2-0.5%) significantly increases their resistance to tempering, while alloying with cobalt causes additional strengthening with $\Delta\sigma \approx 20$ kgf/mm^2 at 5.5% Co, identical in magnitude in the hardened and tempered state. The increased strength as a result of increased carbon content is high only in the hardened state or after low-temperature tempering. The change of ductility properties with increased strength shows that UNS and UNS-50K C-Ni steels have an elongation of 7-15% and reduction in area of 30% for a strength of 200 kgf/mm^2. For UNS-50K steel adequate ductility is provided by low-temperature tempering, while very high strength (265-280 kgf/mm^2) is preserved. All investigated steels had a fine granular structure, which contributes significantly to their high mechanical properties. 2 figures, 2 tables.

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USSR

UDC 577.1:615.7/9

AYZENSHTADT, V. S., and PERKHUROV, V. P.

"Toxicological Characteristics of Dimethyldithiophosphoric Acid"

Sb. nauch. tr. Kuybyshev. NII gigiyeny (Collection of Scientific Works of Kuybyshev Scientific Research Institute of Hygiene), 1971, vyp. 6, pp 90-94 (from RZh-Biologicheskaya Khimiya, No 19, 10 Oct 71, Abstract No 19F2127 by D.G.)

Translation: Experiments on mice, rats and rabbits established that dimethyldithiophosphoric acid, when administered for a long time (up to five months) via the stomach, causes a lowering of blood cholinesterase activity, a lowering of the total SH-group content of the blood serum, a disturbance of cerebral hemodynamics, and dystrophic lesions in the liver (protein dystrophy) and epithelial cells of the convoluted renal tubules. The extent of the lesions depends on dose and length of intoxication, which in severe cases results in death. Foci of fine-drop adipose dystrophy of the parenchymatous cells were also noted in the liver, and focal necrotic lesions of the mucosa in the stomach.

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USSR

UDC 613.6:615.187.5.012

AYZENSHTAD, V. S., DOLMATOVA-GUSEVA, E. G., PERKHUROVA, V. P., SHTIFELMAN, A. V., BOGOMOLOVA, L. M., and NERUBAY, S. M., Institute of Hygiene, Kuybyshev

"Labor Hygiene and the State of the Workers' Health in the Malathion Industry"

Moscow, Gigiyena truda i professionalnyye zabolevaniya, No 3, Mar 71, pp 49-51

Abstract: In the reactor section of a large malathion plant, the atmosphere was found to contain xylene, hydrogen sulfide, maleic anhydride, methanol, ethanol, malathion, as well as dimethyl dithiophosphoric acid, and diethyl maleate. More than 3,500 air samples were analyzed for the above compounds and the results reported in tabular form or the various process stages. It was established that contamination of the air in the plant was due to insufficient automation, the use of manual labor in the handling of poisonous materials, imperfect control devices, and so forth. Time studies showed that laboratory workers were in contact with poisons for 59-92% of their working time. Malathion was detected in washings from the hands and in the work clothes. It was established that laundering of the work clothes in a 1% caustic soda solution is 10 times as effective as the sodium tripolyphosphate

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USSR

AYZENSHTAD, V. S., et al., Gigiyena truda i professionalnyye zabolevaniya, No 3, Mar 71, pp 49-51

wash used in the plant. It was recommended that plant ventilation be improved by installation of suction filtration devices at all points of high pesticide concentrations in the air. Also, the state of health of the workers was studied: 18 people had dermatitis and conjunctivitis, the number of cases of nervous system disorders increased from 10 to 38 over a 1 1/2 year period. Gastrointestinal disturbances increased from 5 to 23 cases over the same period. Rapid introduction of sanitary-hygienic measures was recommended plus repeated checks of the work conditions after their introduction.

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UNCLASSIFIED PROCESSING DATE--18SEP70

1/2 019

TITLE--SPECTROPHOTOMETRIC DETERMINATION OF COPPER AND IRON WITHOUT THEIR SEPARATION IN BRASS, BRONZE, AND SILUMIN -U-

AUTHOR-(02)-PERKOV, I.G., NGUYEN, V.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(1), 59-63

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SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--COPPER, IRON, BRASS, BRONZE, SPECTROPHOTOMETRIC ANALYSIS, ALLOY DESIGNATION, ALUMINUM ALLOY/(U)SILUMIN SILICON ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

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2/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108114

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DECOMP. 0.5 G OF THE ALLOY AS SHAVINGS IN 3 ML HNO SUB3, 1-2 ML HCL, AND 30 ML H SUB2 O; AFTER DECOMPN. BOIL FOR 5 MIN, COOL AND DIL. TO 100 ML WITH H SUB2 O. DIL. A 5 ML ALIQUOT TO 100 ML WITH ACETATE BUFFER, ADD 50 ML 1PERCENT N,BENZOYLPHENYLHYDROXYLAMINE IN CHCL SUB3, AND EXT. BY SHAKING FOR 10 MIN. MEASURE THE ABSORBANCE OF THE ORG. PHASE AT 400-70 M MU AND DET. THE CONCN. OF THE METAL IN PERCENT FROM C EQUALS M A SUBVORG. 10-AV, WHERE M IS THE CONCN. OF CU AND FE IN THE ORG. PHASE, SUBVORG. IS THE VOL. OF THE ORG. PHASE, A THE WT. OF SAMPLE, A THE AT. WT. OF THE METAL, AND V THE VOL. OF ALIQUOT.

UNCLASSIFIED

USSR UDC: 621.391:519.2

PER'KOV, V. V., YAKOVLEV, L. A.

"On the Time of Establishing the Communication of a Receiver in a Wide-Band Radio Communications System"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Educational Institutes of Communications. Ministry of Communications of the USSR), 1970, vyp. 48, pp 79-88 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A79)

Translation: The authors consider a device for receiver synchronization in a wide-band radio communications system when using composite signals formed according to the law of a double pseudorandom sequence. The mean time for netting the receiver is determined for the case of additive jitter. The optimum threshold value in the synchronization device is found (for a single-beam channel with constant parameters) which minimizes the average netting time. Resumé.

1/1

USSR

UDC 621.396.2:621.371.1

LESMAN, M. Ya., PERKOV, V. V., YAKOVLEV, L. A.

"Wideband Communications System with Phase Modulation Invariant with Respect to the Doppler Effect"

Materialy nauchnotekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. vyp. 2 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute, vyp. 2), Leningrad, 1970, pp 55-59 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A299)

Translation: This article contains an investigation of the principles of constructing an FM wideband communication system which is invariant with respect to the Doppler effect. The expected characteristics of the system are discussed, a brief description of a model of the system and the results of laboratory testing of it are presented.

1/1

Graphite

UDC 621.3.035.2

USSR

GOLOVINA, YE. S., SHIPKOV, N. M., KOTOVA, L. I., PERKOVA, G. A., DEMIN, A. V., and RAKCHEYEVA, V. I.

"Reactivity of Graphite With Titanium and Silicon Additives"

Tsvetnyye Metally, No 3, Mar 71, pp 59-62

Abstract: The reactivity of graphite with added titanium (0-10%) and silicon (3 wt %) was studied in an active gas medium at high temperatures (2500 and 3000°K). It was established that the introduction of silicon alone, facilitating the technological process, only slightly increases the resistance of graphite in the active medium. The combined introduction of titanium and silicon significantly reduced the reactivity of the graphite.

Graphite

USSR

UDC: 621.3.035.2

LUTKOV, A. I., VOLGA, V. I., DYMOV, B. K., DEMIN, A. V., RAKCHEYEVA, V. I., and PERKOVA, G. A.

"Investigating the Effect of Refractory Elements on the Thermal and Electrical Conductivity of Graphite"

Moscow, Tsvetnyye Metally, No 8, Aug 70, pp 48-51

Abstract: The recent development of a method for graphite production involving thermomechanical processing under pressure has led to the diffusion of contaminants in the graphite. These contaminants react with the carbon to produce materials whose thermal and electrical conductivity characteristics are very sensitive to crystal structural defects caused by the contaminants. The purpose of this article was to investigate graphite obtained by this thermomechanical processing of coke into which refractory elements such as Ti, Si, Zr, and B, were introduced. The procedure for measuring the thermal and electrical conductivity in the temperature interval of 80-2500° K is the same as that used in an earlier paper written by the first-named of the authors above, in collaboration with others (Collection "Konstruktsionnyye materialy

USSR

LUTKOV, A. I., et al., Tsvetnyye Metally, No 8, Aug 70, pp 48-51

na osnove grafita" -- Structural Materials Based on Graphite -- 4th edition, published by "Metallurgiya," 1965, p 59). A brief description of the thermomechanical procedure is given. The authors found that the heightening of the material's plasticity, the result of the interaction between the carbon and these refractory elements, affects the properties of the product. They found also that boron, which is a close neighbor of carbon in the periodic table and has a practically equal atomic radius, can replace the carbon in the graphite lattice. It was noted that the presence of boron promotes the graphitization process. Curves of the thermal and electrical conductivity of the graphite as functions of the temperature in the graphitization furnace, for various concentrations of the refractory elements, are given.

2/2

1/2 057 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--NEW CLASS OF SYNTHETIC GRAPHITES -U-

AUTHOR-(04)-DEMIN, A.V., RAKCHEYEVA, V.I., PERKOVA, G.A., SHIPKOV, N.N.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(4), 61-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS, PHYSICS

TOPIC TAGS--CHEMICAL SYNTHESIS, GRAPHITE, SEMICONDUCTOR MATERIAL, ANISOTROPY, CHEMICAL COMPOSITION, TITANIUM, SILICON, BORON, ZIRCONIUM

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2/2 057 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134925

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW TYPE OF SYNTHETIC GRAPHITE WAS DEVELOPED. THE MATERIALS (GRAPHITE PLUS TI, ZR, SI, B, ETC., UP TO 10 WT. PERCENT) ARE PRESSURE TREATED ABOVE 2000DEGREES. IN ALL PHYS. CHARACTERISTICS THE NEW TYPE OF SYNTHETIC GRAPHITES DIFFERS FROM KNOWN GRAPHITE MATERIALS, E.G., THE STRENGTH OF THESE MATERIALS IS HIGHER BY A FACTOR OF 2-3. THE POSSIBILITY OF CHANGING THE THERMAL COND. IN THE WIDE RANGE (FROM 35-40 FOR USUAL GRAPHITES TO 300 KCAL PER M HR DEGREE FOR CU) IS A UNIQUE PROPERTY OF THESE MATERIALS. THE NEW GRAPHITES SHOW ANISOTROPY ALSO. THESE NEW GRAPHITES HAVE APPLICATIONS AS MATERIALS FOR SEMICONDUCTOR AND HIGH TEMP. TECHNIQUES.

UNCLASSIFIED

USSR

UDC 621.3.035.2

DEMIN, A. V., RAKCHEYEVA, V. I., PERKOVA, G. A., and SHIPKOV, N. N.

"New Class of Synthetic Graphites"

Moscow, Tsvetnyye Metally, No 4, Apr 70, pp 61-62

Abstract: The physical-mechanical properties of a new class of artificial graphites, including C-Zr-Si, C-Ti-Si, C-Ti-B, and C-B, are presented and discussed. Analysis of the data shows that the new class of graphites differs appreciably from the known graphites with respect to all physical characteristics. The strength of the new materials is 2-3 times higher, and the porosity is tens of times lower. One unique property of the new graphites is the possibility of varying the thermal conductivity within broad limits: from the thermal conductivity of ordinary graphite (35-40 kcal/m·hr·deg) to the thermal conductivity of copper (300 kcal/m·hr·deg). The distinguishing feature of the new class is anisotropy of their properties which varies from version to version, reaching a highest value of 2.5-3. The physical-mechanical characteristics of the synthetic graphites permit them to be used in semiconductor and high-temperature engineering, in melting and casting production, and in chemical machine-building.

1/1

USSR UDC 577.4

BUNIN, P. G., PERLAMUTROV, V. L., and SOKOLOVSKIY, L. KH.

"Methods of Mathematical Economics for the Control of Working Capital"

Ekonomiko-matematicheskiye metody upravleniya oborotnymi sredstvami (cf. English above), Moscow, "Finansy," 1973, 240 pp, ill., 77 k. (from RZh-Matematika, No 6, Jun 73, Abstract No 6V582K)

Translation: The book takes up the organization of working capital in industry on the principles of profit-and-loss accounting, as well as questions relating to the improvement of planning through the methods of mathematical economics. A procedure is shown for computer-aided calculation of aggregate working-capital requirement and determination of the optimal level of one's own capital and the demand for bank credit. The requirements that must be met by the economic information for the computer-aided evaluations are stated.

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USSR

BUNICH, P. G., PERLAMUTROV, V. L., SOKOLOVSKIY, L. Kh.

"Mathematical Economics Methods of Control of Operating Funds"

Ekonomiko-Matematicheskiye Metody Upravleniya Oborotnymn Sredstvami. [English Version Above], Moscow, Finansy Press, 1973, 240 pages (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V582K).

Translation: Independent organization of operating capital in industry and problems of the improvement of planning using mathematical economics methods are discussed. A method is demonstrated for computer calculation of the overall requirement for operating capital, determination of the optimal ratio between equity capital and debt capital. Requirements for economic information for computer calculations are outlined.

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USSR

UDC 621.396:6-181.5

KOLESNIKOV, D. P., ORESHKOV, YU. YE., PERLICH, YU. L., BUTUZOV, V. S.

"Electron Pulse Adjustment of Thin-Film Resistors"

Elektron. prom-st'. Nauch.-tekhn. sb. (Electronics Industry. Scientific and Technical Collection), 1971, No 4, pp74-75 (from RZh-Radiotekhnika, No 5, May 72, Abstract No 5V273)

Translation: An adjustment method based on eliminating unstable lattice defects arising on condensation of the vapors of the initial material by controlled annealing with transmission of short current pulses through the resistor is described. The results of studying the magnitude of the change in resistance as a function of the amplitude, duration and the number of pulses are presented. There are 3 illustrations and a 2-entry bibliography.

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